

Inventors: Paul Wollcott Harrison
High Contrast Surface Marking Using Irradiation of Electrostatically Applied Marking Materials
Application No. 09/880,391
Attorney Docket No.: 122656.00121

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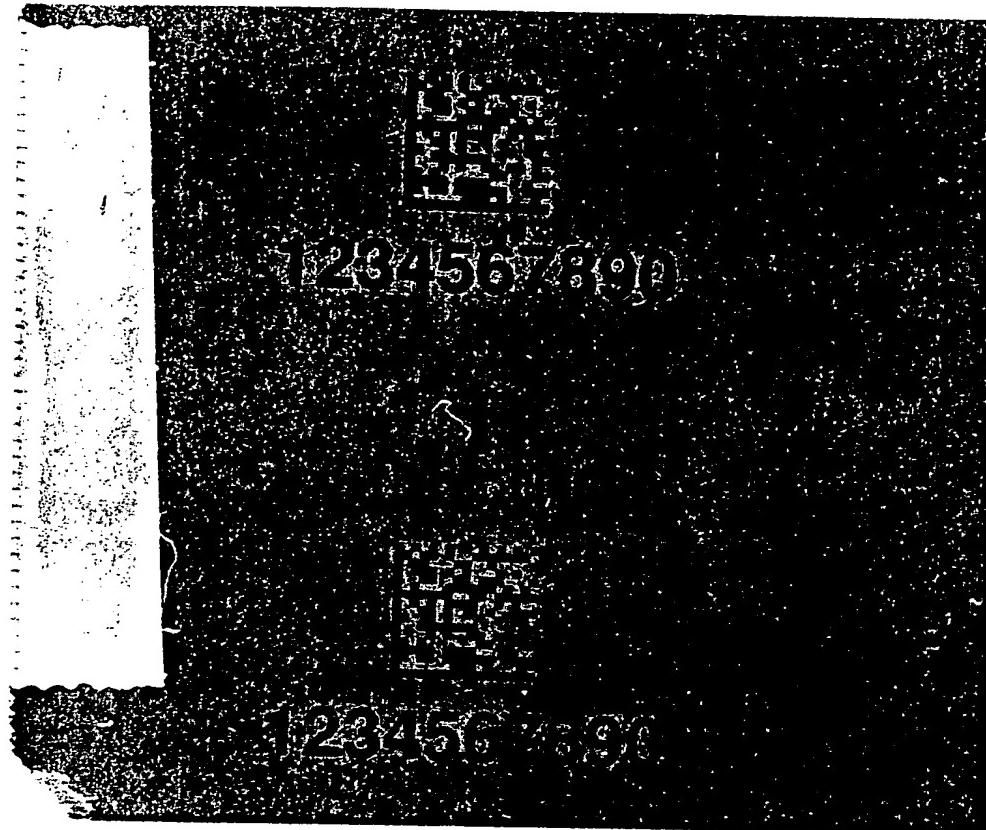


FIG. 1

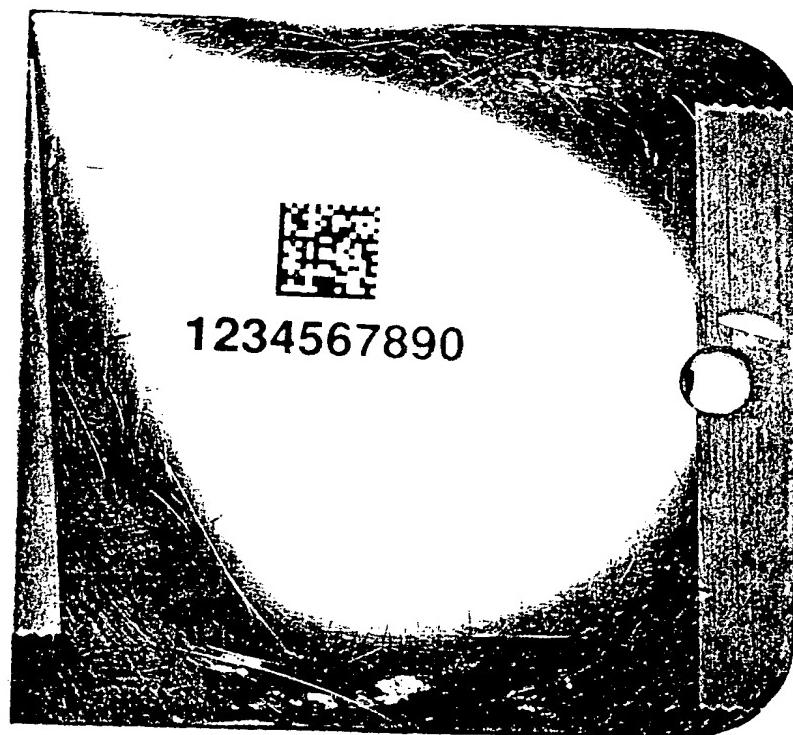
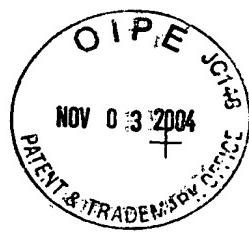


FIG. 2



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FIG. 3

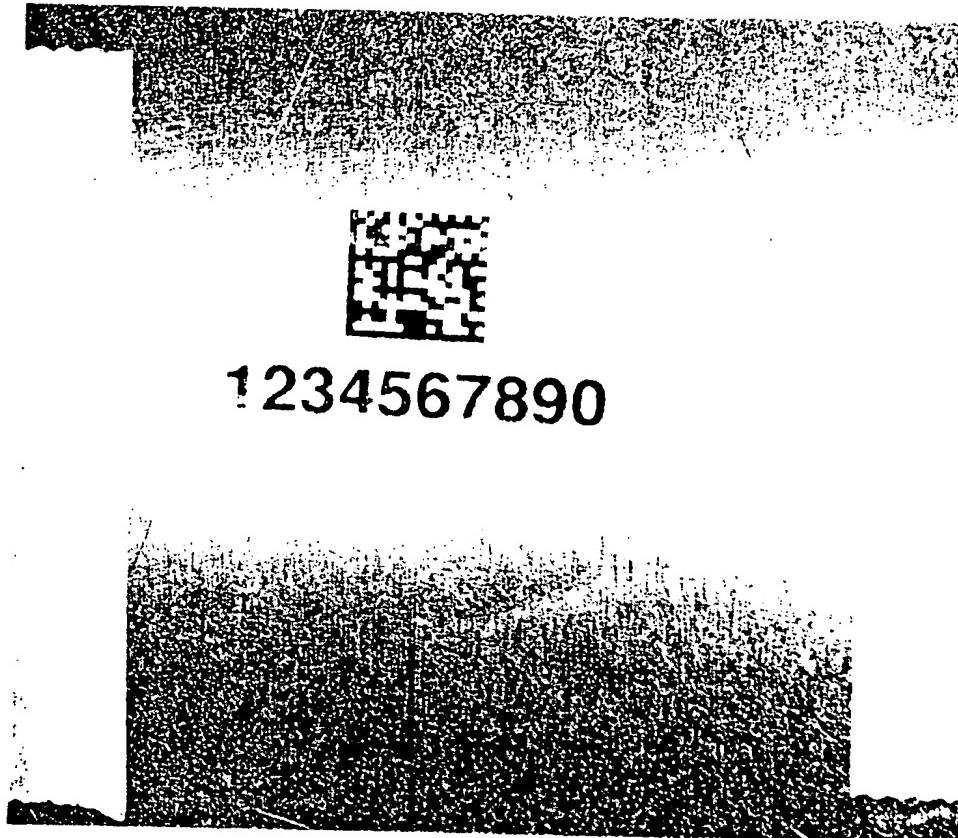
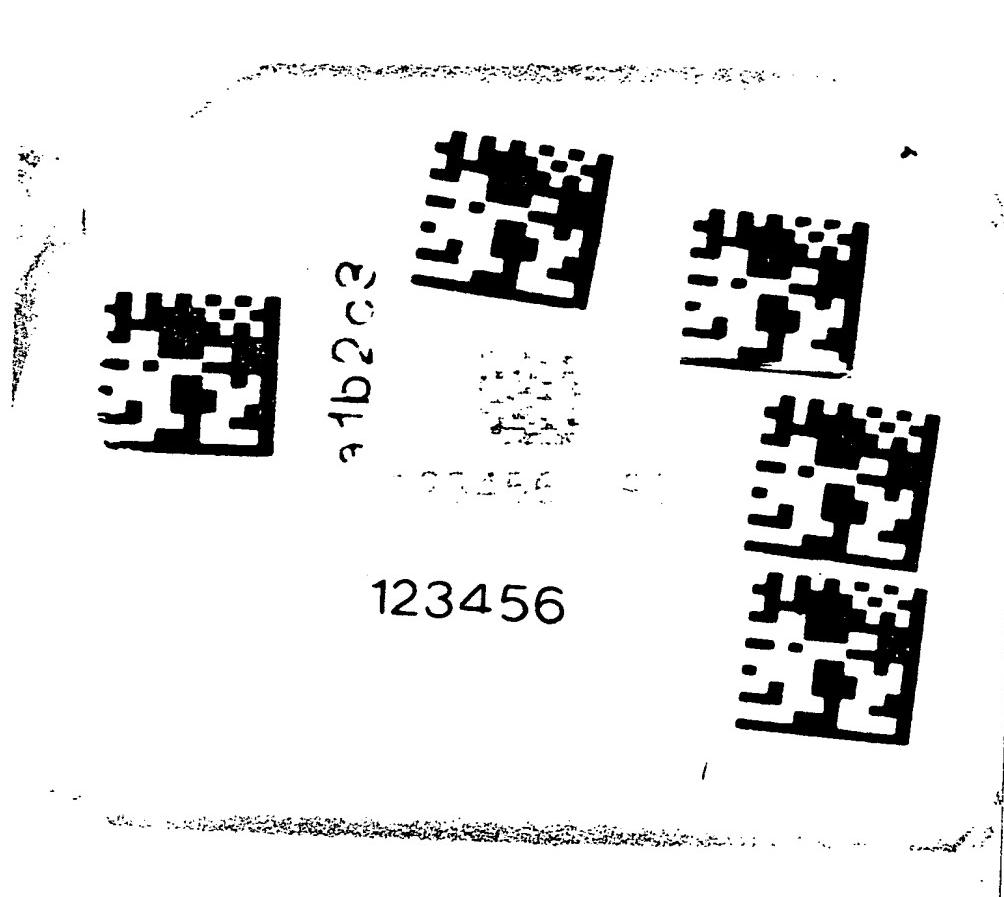
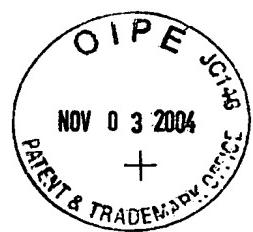


FIG. 4





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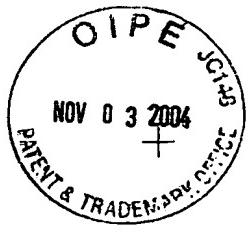
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FIG. 5

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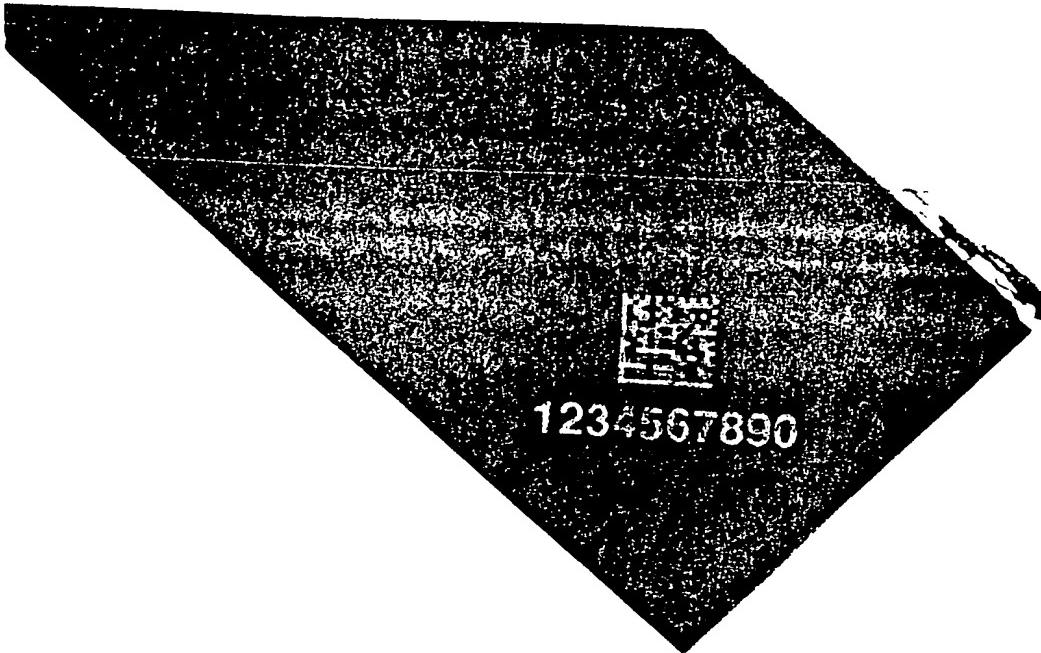


FIG. 6

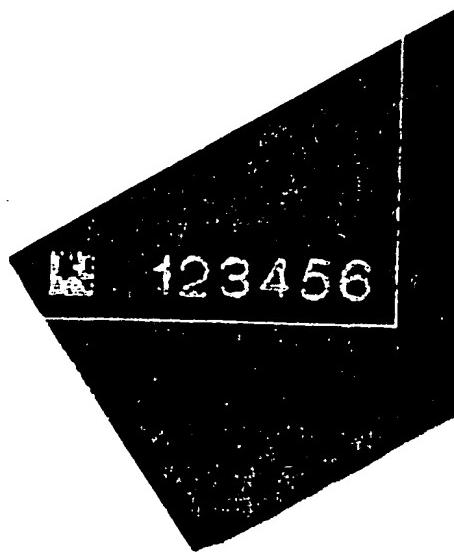


FIG. 7

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<u>Substrate Materials</u>	<u>Marking Materials</u>	<u>Beam Speed</u>	<u>Power (watts)</u>	<u>Freq (Khz/Cw)</u>
Aluminum	Mixed Metal Oxide	200mm/sec	5 watts	CW
Aluminum	Glass Frit	250mm/sec	5 watts	CW
Brass	Mixed Metal Oxide	200mm/sec	5 watts	CW
Ceramic	Glass Frit	200mm/sec	5 watts	CW
China	Glass Frit	200mm/sec	5 watts	CW
Copper	Mixed Metal Oxide	100mm/sec	5 watts	20 KHz
Auto Safety Glass	Glass Frit	200mm/sec	5 watts	CW
CRT Display Glass	Glass Frit	200mm/sec	5 watts	CW
Flat Panel Display Glass	Glass Frit	200mm/sec	5 watts	CW
Microscope Slide Glass	Glass Frit	200mm/sec	5 watts	CW
Nickel	Mixed Metal Oxide	200mm/sec	5 watts	CW
Nylon™	Mixed Metal Oxides	250mm/sec	5 watts	CW
Porcelain	Glass Frit	200mm/sec	5 watts	CW
PVC	Mixed Organic Pigments	200mm/sec	5 watts	CW
Stainless Steel	Mixed Metal Oxide	200mm/sec	5 watts	CW
Stainless Steel	Glass Frit	300mm/sec	5 watts	CW
Teflon™	Mixed Metal Oxides	200mm/sec	5 watts	CW
Tin	Mixed Metal Oxide	200mm/sec	5 watts	CW
Titanium	Mixed Metal Oxide	200mm/sec	5 watts	CW

FIG. 8



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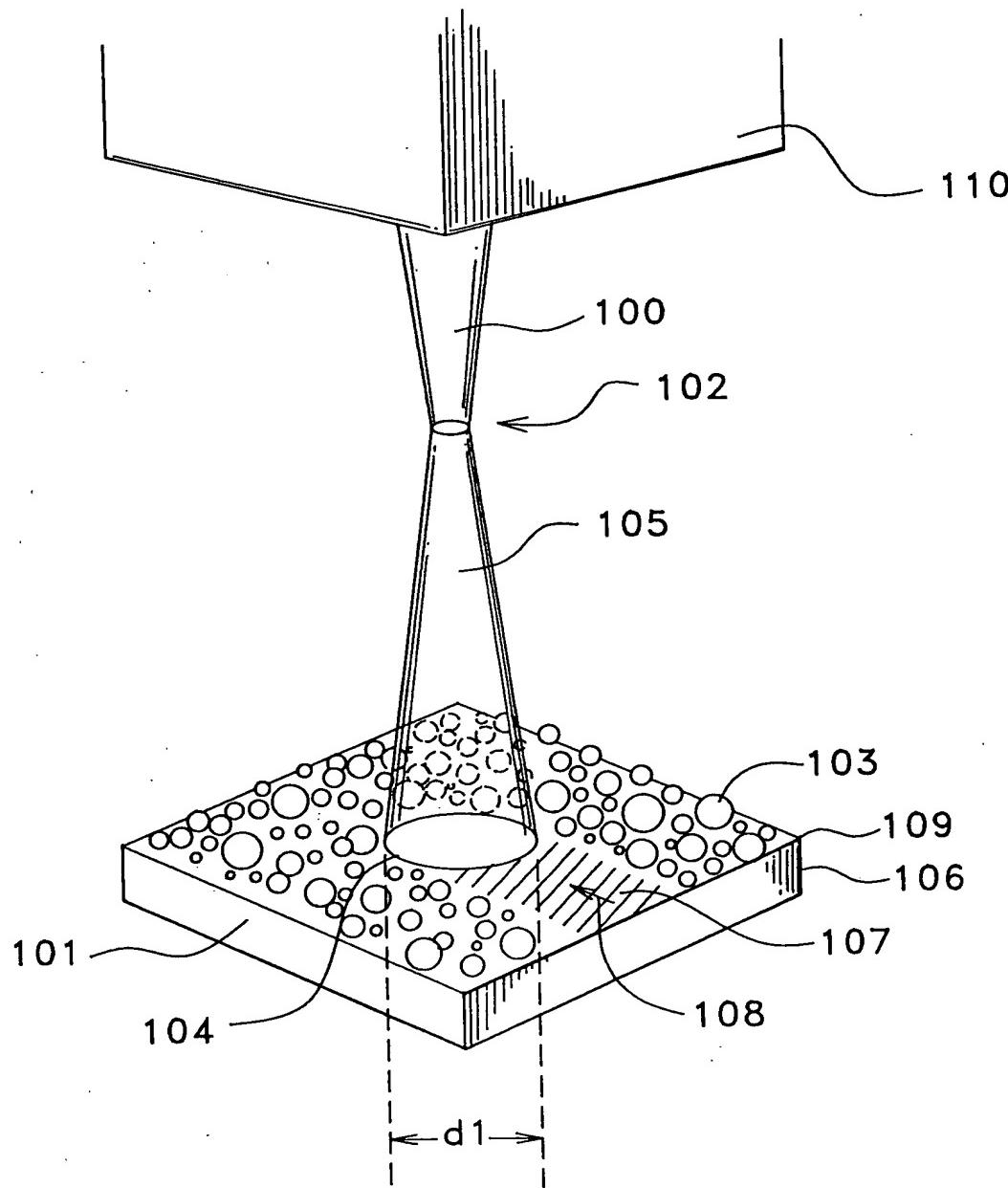


FIG. 9

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MODE:VSI MAG:5.0X SIZE: 368 X 236

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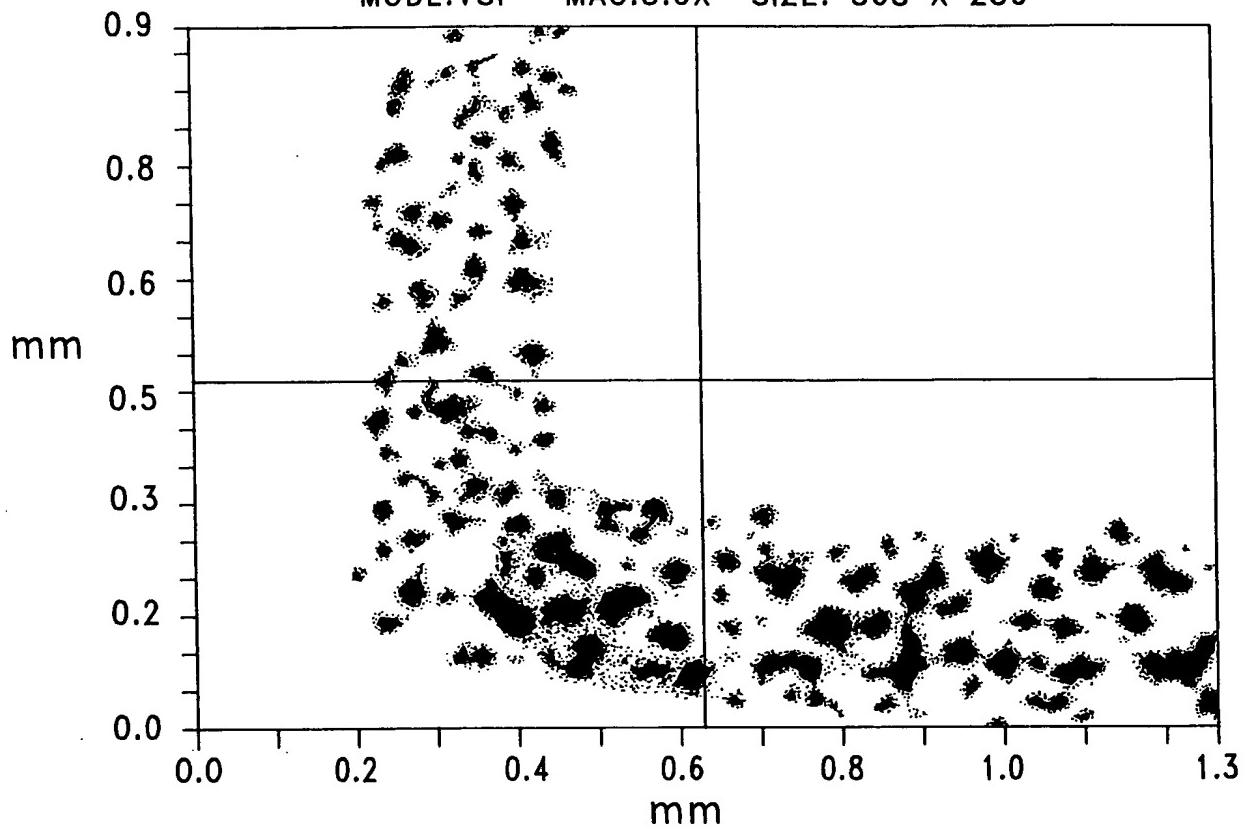


FIG. 10 a

GLASS SLIDE - PORCELAIN/GLASS FRIT

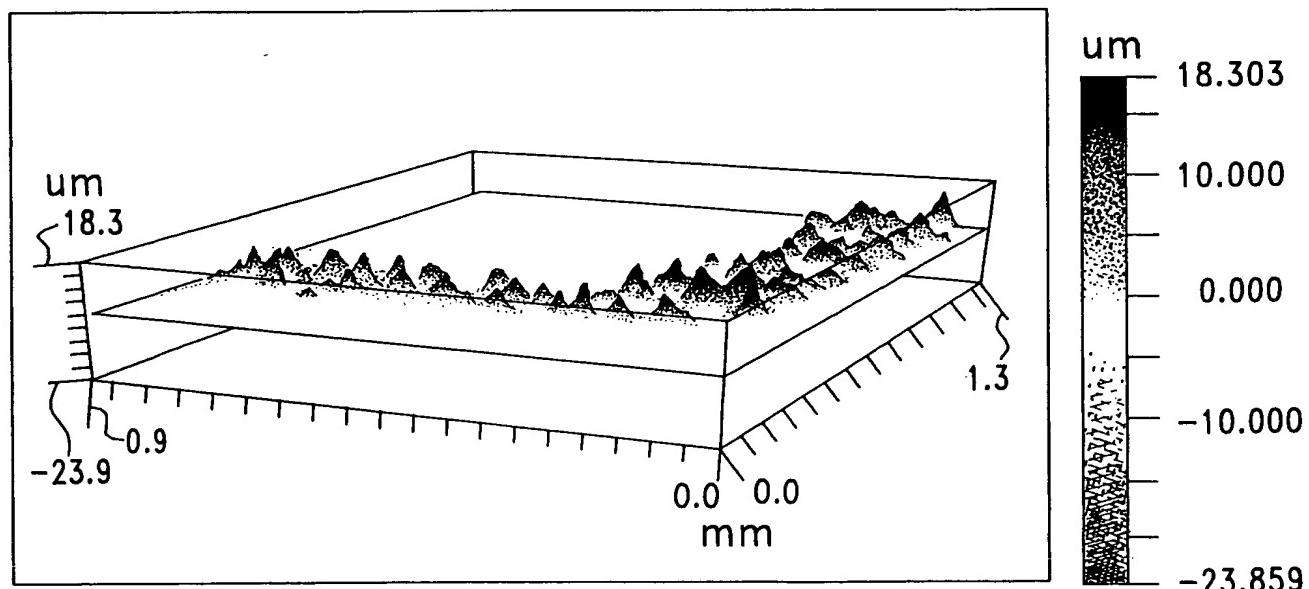


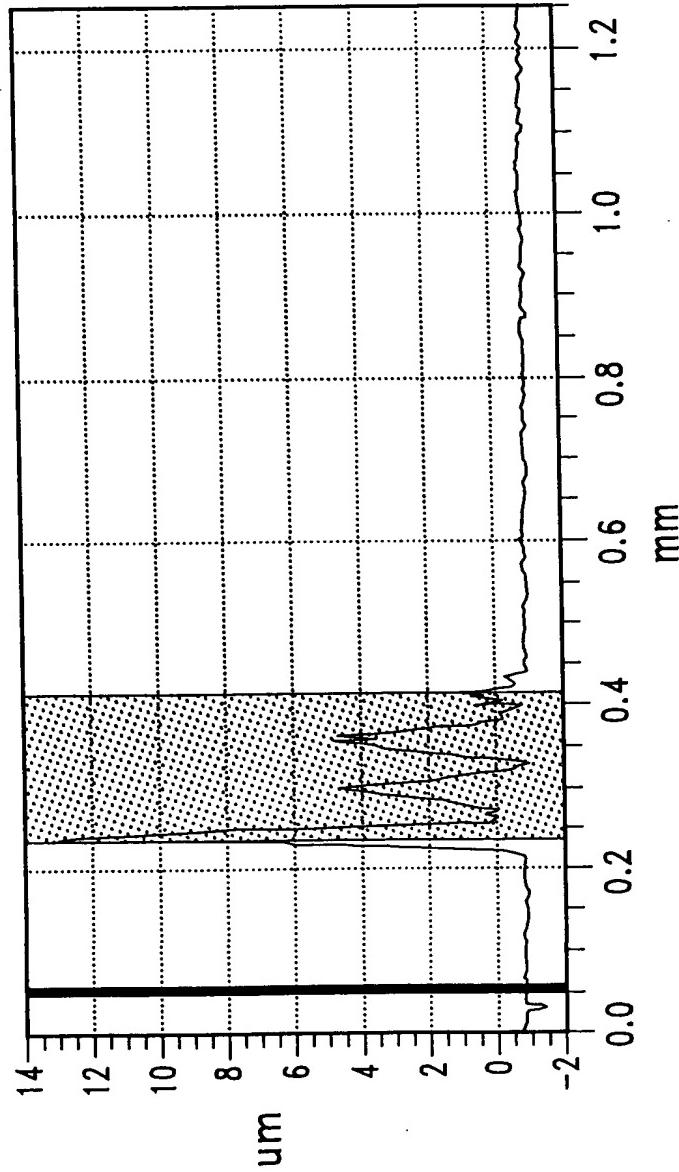
FIG. 10 b



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X-PROFILE/2 PT/RADIAL



L:	0.05 mm	-0.83 um	Angle: 0.64°
R:	0.33 mm	2.23 um	Curve: -14.65 mm
D:	0.27 mm	3.05 um	Terms: None
Rp:	13.17 um		AvgHt: 0.61 um
RV:	-0.92um		Area 0.17 um ²

Rq:	2.92 um
Ra:	1.97 um
Rt:	14.09 um
Rp:	13.17 um
RV:	-0.92um

FIG. 10C

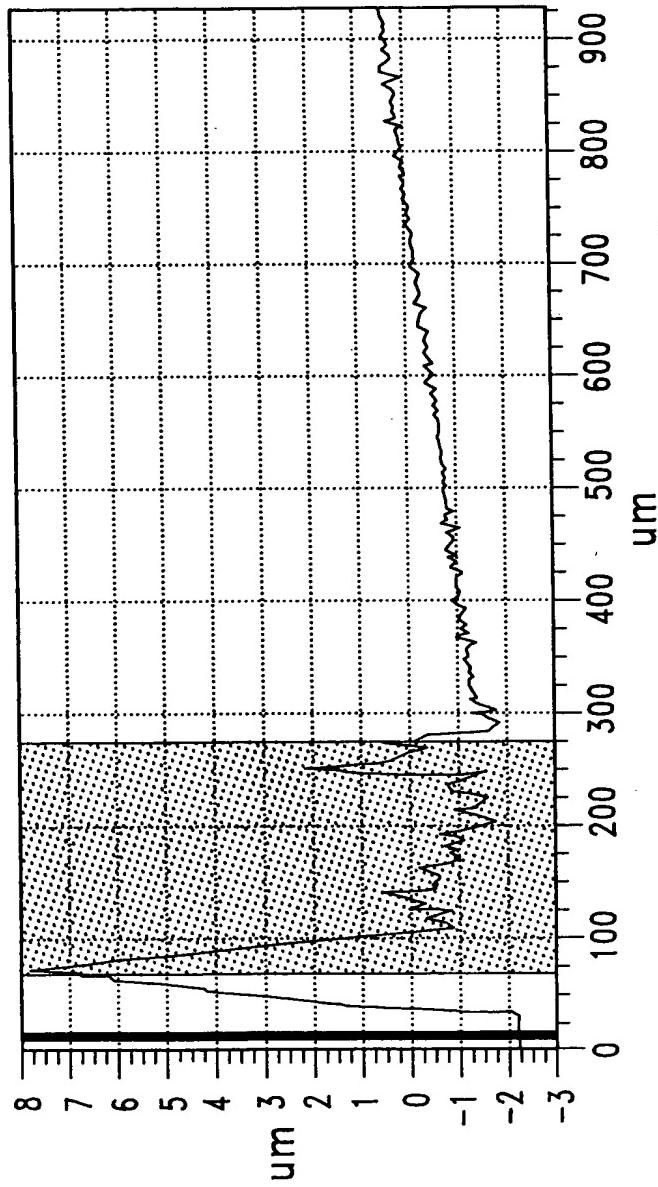
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Y-PROFILE/CIRCULAR



L:	13.93 um	-2.15 um	Angle: 0.98°
R:	170.62 um	0.54 um	Curve: -492.76 um
D:	156.69 um	2.69 um	Terms: None
Rp:	7.79 um		AvgHt: 1.20 um
Rv:	-2.16 um		Area: 187.84 um²

Rq:	2.85 um
Ra:	2.44 um
Rt:	9.96 um
Rp:	7.79 um
Rv:	-2.16 um

FIG. 10.d

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